S 25

SERVICE MANUAL

SANYO

MINI CASSETTE STEREO PLAYER

M4440

142 33801

SPECIFICATIONS

Power Source	
DC	6V (UM-3, HP 7, AA Cell, Mignonzellen, R6) x 4
Output Power	30mW (maximum)
Current Consumption (at VR min)	
Playback mode	110mV
Fast Forward mode	140mV
Rewind mode	140mV
Tape Speed	1-7/8ips. ±3%
Wow & Flutter	0.35% (WRMS)
Fast Forward Time	150sec. (C-60 cassette)
Rewind Time	150sec. (C-60 cassette)
Frequency Response	63 – 10kHz
Signal to Noise Ratio	45dB
Crosstalk (with Fe2O3)	
Track to Track	55dB
Channel Separation	33dB
Hum & Noise	43dBs (Vol max.)

—Specifications subject to change without notice.—

WM-5957

525

MECHANICAL ADJUSTMENTS

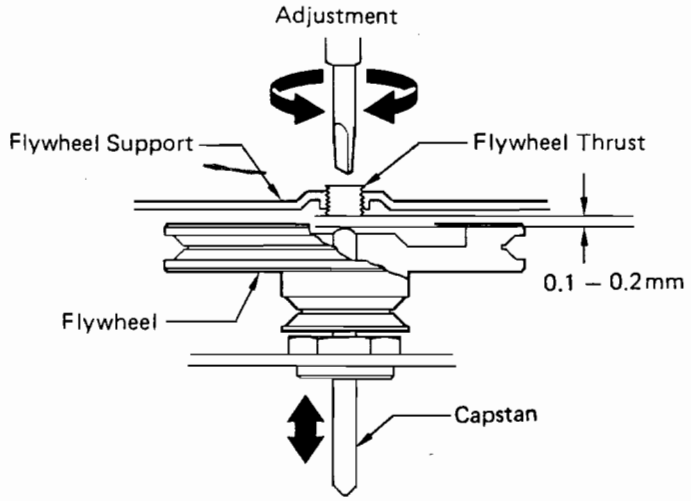
GENERAL REMARK

Before adjusting the mechanism of this unit, wipe the tape contacting surfaces clean as well as the contacting surfaces of the driving parts with a soft cloth soaked in alcohol. Trouble may occur because of oil and grease stains.

FLYWHEEL THRUST ADJUSTMENT

The clearance between the Flywheel Thrust and the Flywheel should be 0.1 – 0.2mm with the Chassis upside down. If necessary, adjust the clearance with the following procedure.

1. While moving the Capstan up and down, slowly turn the Flywheel Thrust clockwise to obtain the clearance of "0" (zero) between the Flywheel Thrust and Flywheel.



NOTE:
Do not turn the Flywheel Thrust forcibly.

2. Turn the Flywheel Thrust counterclockwise by approximately 45° from the zero clearance position.

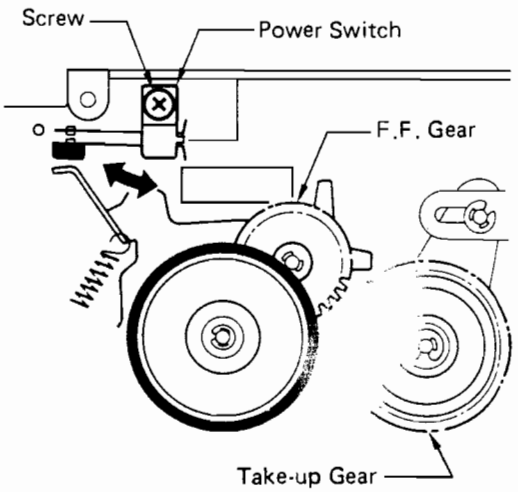
3. After the adjustment, secure the Flywheel Thrust with paint or glue.

POWER SWITCH POSITION ADJUSTMENT

1. Press the play button.

2. While slowly pushing the F.F. button, check to see that the Power Switch once opens, then closes after the F.F. Gear and Take-up Gear engaged.

3. If necessary, loosen the screw fastening the Power Switch and adjust the switch position by moving the Power Switch as illustrated.



4. After the adjustment, tighten the screw and secure the screw with paint or glue.

ELECTRICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- VTVM
- Frequency Counter
- Dummy Load (34 ohm)
- Test Tapes
  - * 3kHz Test Tape for the Tape Speed Adjustment
  - * 10kHz Test Tape for the Head Azimuth Adjustment
- Alignment Tool

NOTE:

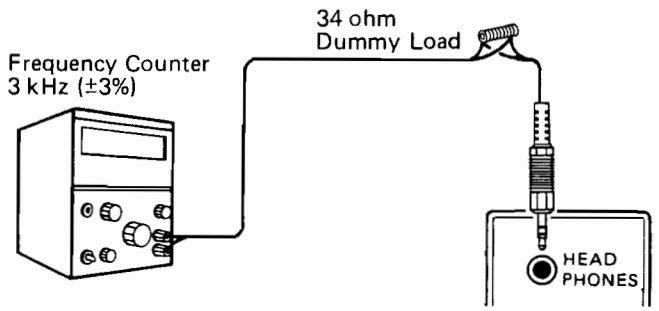
Before the Electrical Adjustments, set the unit as follows:

- * Talk Switch . . . . . OFF
- * Tone Switch . . . . . High
- * Balance Control . . . . . 0 (Center Position)
- * Pitch Control . . . . . 0 (Detent Position)
- * Supply a regulated DC 6V power to the DC 6V Jack (J2).

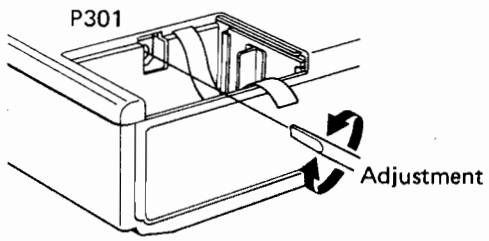
TAPE SPEED ADJUSTMENT

1. Remove the Battery Compartment Lid and take out Batteries from the compartment.

2. Connect a frequency counter to the Headphone Jack (J1) as illustrated and insert a 3kHz test tape into the cassette compartment.



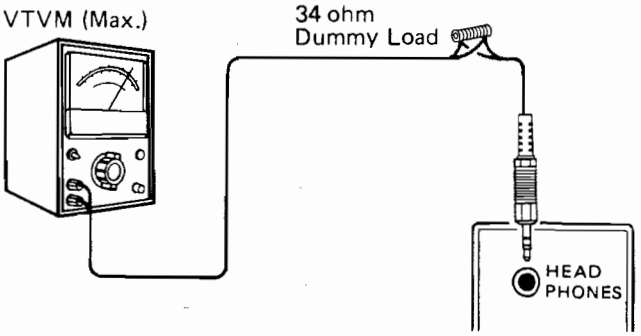
3. While playing back the test tape, adjust the tape speed by turning the potentiometer (P301) on the P.C.Board with an alignment tool until the frequency counter reads 3kHz.

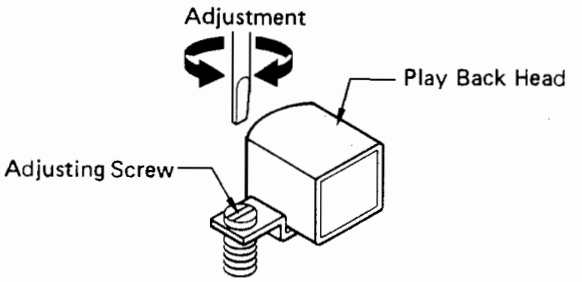


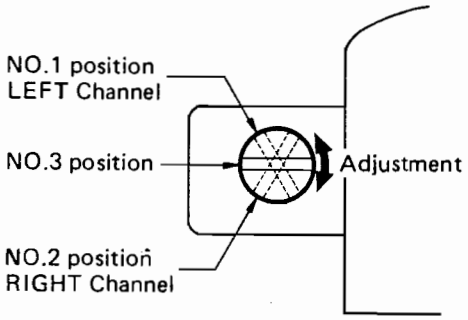
R/P HEAD AZIMUTH ADJUSTMENT

1. Remove the cassette compartment lid by following the instructions for it.

2. Connect a VTVM to the Headphones Jack as illustrated and play back a 10kHz test tape.







3. Turn the azimuth adjusting screw until the Left channel on the VTVM becomes maximum. (No. 1 position)

4. Reconnect the VTVM to the Right channel.

5. Then, turn the azimuth adjusting screw again until the Right channel output on the VTVM becomes maximum. (No. 2 position)

6. Turn the adjusting screw to the center of the No.1 and No. 2 positions as illustrated. (No. 3 position)

7. Repeat the above described adjustment several times.

8. After the adjustment, secure the adjusting screw with paint or glue.

PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141 6 1419 53100	Case Top	1
	141 6 1419 53200	Case Bottom	1
	141 6 1449 70800	Styrofoam Case	1
	141 6 2519 12090	Poly Cover	1
	141 6 2519 15026	Poly Cover	1
	141 6 3919 39000	Plain Pad	1
	141 6 4559 00100	Serial No. Sheet	3
	ACCESSORIES		
	4 1529 70200	Headphone	1
	4 2419 73972	Cassette	1
	141 2 1769 05100	Shoulder Strap	1
	141 2 1819 12000	Carrying Case	1
	141 2 1829 04000	Cassette Pouch	1
	141 6 4419 18100	Caution Tag	1
	142 6 4119 12200	Instruction Book	1
	CABINET		
BM1	4 1539 70620	Microphone	1
	141 0 1119 69406	Completed Cabinet Top	1
	141 0 1119 74700	Cabinet Bottom Assy	1
	141 0 1339 09302	Battery Lid Assy	1
	141 2 1119 64902	Cabinet Front	1
	141 2 1119 69600	Cabinet Jack	1
	141 2 1419 12800	Rating Plate	1
	141 2 1519 27500	Microphone Grille	1
	141 2 1619 77000	Pause Button	1
	141 2 2149 15300	Cabinet Bracket	1
	141 2 2529 03100	Shaft	1
	141 2 3899 10100	Microphone Holder	1
	141 2 4219 04001	Screw M2.0x6	4
	141 2 4469 34600	Cushion	2
	141 2 4469 36500	Cushion	1
	141 2 7529 90200	Bottom Post	2
	101 3 1302 00411	Screw, Pan Hd. +M2.0x4	2
	103 3 1302 00511	Screw, Pan Hd. Tapping-2 +M2.0x5	1
	127 3 1317 03018	PC Screw, Pan Hd.-1 +M1.7x3.0	1
D302	202 5 8220 14120	Diode, SLP141B (Operation)	1
	141 2 1619 76900	Microphone Sensor Button	1
	141 2 2449 37000	Sheet	3
	141 2 3229 31900	Shield Plate	1
	141 2 4729 00100	Lug	1
	101 3 1302 00611	Screw, Pan Hd. +M2.0x6	1
	131 3 1302 00411	Screw, Pan Hd. C SW +M2.0x4	4
C311	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
	141 2 4469 31800	Damper	1
	AMPLIFIER P.C.B. ASSY		
	4 1329 76510	Amplifier P.C.B. Assy	1
	141 2 1639 40300	Control Knob	1
	141 2 4219 23500	Screw	1
	141 2 1639 37401	Control Knob	1
	141 2 4219 08900	Screw	1
	141 2 1639 37501	Speed Control Knob	1
	141 2 4219 08900	Screw	1
	101 3 1302 00311	Screw, Pan Hd. +M2.0x3	2
	141 2 4179 04400	Plate Nut	1
	141 2 4729 04700	Staple 10	9
	141 2 4729 05000	Staple 5	1
J1	4 2359 75260	Jack 1P (Headphones)	1
J2	4 2359 72954	Ext. Power Socket	1
S3	4 2319 74420	Slide Switch (Tone)	1
S4	4 2319 74410	Slide Switch (Talk)	1
C101	CC8 2 1500 KE00C	Ceramic 820 pF 50V ±10%	1
C102	CD1 0 5500 0002V	Electrolytic 1 μF 50V	1
C103	CD4 7 663A 0002V	Electrolytic 47 μF 6.3V	1
C104	CM3 3 3500 K00MV	Mylar 0.033 μF 50V ±10%	1
C105	CD1 0 6160 0002V	Electrolytic 10 μF 16V	1
C106	CM6 8 3500 K00MV	Mylar 0.068 μF 50V ±10%	1
C107	CD4 7 5250 0002V	Electrolytic 4.7 μF 25V	1

Ref. No.	Part No.	Description	Q'ty
	AMPLIFIER P.C.B. ASSY		
C108	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C109	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C110	CD2 2 663A 0002V	Electrolytic 22 μF 6.3V	1
C111	CM6 8 3500 K00MV	Mylar 0.068 μF 50V ±10%	1
C112	CM1 0 3500 K00MV	Mylar 0.01 μF 50V ±10%	1
C113	CD1 0 763A 0002V	Electrolytic 100 μF 6.3V	1
C114	CD2 2 7100 0001V	Electrolytic 220 μF 10V	1
C115	CD3 3 7100 0001V	Electrolytic 330 μF 10V	1
C116	CC5 6 1500 KE00C	Ceramic 560 pF 50V ±10%	1
C201	CC8 2 1500 KE00C	Ceramic 820 pF 50V ±10%	1
C202	CD1 0 5500 0002V	Electrolytic 1 μF 50V	1
C203	CD4 7 663A 0002V	Electrolytic 47 μF 6.3V	1
C204	CM3 3 3500 K00MV	Mylar 0.033 μF 50V ±10%	1
C205	CD1 0 6160 0002V	Electrolytic 10 μF 16V	1
C206	CM6 8 3500 K00MV	Mylar 0.068 μF 50V ±10%	1
C207	CD4 7 5250 0002V	Electrolytic 4.7 μF 25V	1
C208	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C209	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C210	CD2 2 663A 0002V	Electrolytic 22 μF 6.3V	1
C211	CM6 8 3500 K00MV	Mylar 0.068 μF 50V ±10%	1
C212	CM1 0 3500 K00MV	Mylar 0.01 μF 50V ±10%	1
C213	CD1 0 763A 0002V	Electrolytic 100 μF 6.3V	1
C214	CD2 2 7100 0001V	Electrolytic 220 μF 10V	1
C215	CD3 3 7100 0001V	Electrolytic 330 μF 10V	1
C216	CC5 6 1500 KE00C	Ceramic 560 pF 50V ±10%	1
C301	CD2 2 7100 0001V	Electrolytic 220 μF 10V	1
C302	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C303	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C304	CA2 2 4100 M000V	Aluminum 0.22 μF 10V ±20%	1
C305	CM3 9 2500 K00MV	Mylar 0.0039 μF 50V ±10%	1
C306	CM1 0 3500 K00MV	Mylar 0.01 μF 50V ±10%	1
C307	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C308	CD2 2 7100 0001V	Electrolytic 220 μF 10V	1
C309	CD4 7 7100 0001V	Electrolytic 470 μF 10V	1
C310	CD4 7 7100 0001V	Electrolytic 470 μF 10V	1
D301	202 5 9530 44810	Diode, DS448	1
IC101	206 5 1084 14010	IC, LA4140	1
IC201	206 5 1084 14010	IC, LA4140	1
IC301	206 5 0793 16020	IC, LA3160T	1
L301	4 2539 70850	Choke Coil (200 μH)	1
L302	4 2539 70840	Choke Coil (220 μH)	1
P301	4 2229 72640	Potentiometer (B-350)	1
Q101	203 5 5000 53650	Transistor, 2SC536	1
Q201	203 5 5000 53650	Transistor, 2SC536	1
Q301	203 5 6980 59860	Transistor, 2SB598	1
Q302	203 5 5210 53660	Transistor, 2SC536	1
Q303	203 5 5210 53660	Transistor, 2SC536	1
Q304	203 5 4830 60860	Transistor, 2SA608	1
Q305	203 5 5210 53660	Transistor, 2SC536	1
Q306	203 5 5210 53660	Transistor, 2SC536	1
Q307	203 5 4830 60860	Transistor, 2SA608	1
R101	RP4 7 3121 JT000	Pretty 47k ohm 1/8W ±5%	1
R102	RP1 0 3121 JT000	Pretty 10k ohm 1/8W ±5%	1
R103	RP1 0 1121 JT000	Pretty 100 ohm 1/8W ±5%	1
R104	RP3 6 2121 JT000	Pretty 3.6k ohm 1/8W ±5%	1
R105	RP1 0 4121 JT000	Pretty 100k ohm 1/8W ±5%	1
R106	RP1 2 3121 JT000	Pretty 12k ohm 1/8W ±5%	1
R107	RP1 2 2121 JT000	Pretty 1.2k ohm 1/8W ±5%	1
R108	RP2 2 1121 JT000	Pretty 220 ohm 1/8W ±5%	1
R109	RP1 0 0121 JT000	Pretty 10 ohm 1/8W ±5%	1
R110	RP1 0 2121 JT000	Pretty 1k ohm 1/8W ±5%	1
R111	RP1 0 3121 JT000	Pretty 10k ohm 1/8W ±5%	1
R112	RP1 2 0121 JT000	Pretty 12 ohm 1/8W ±5%	1
R201	RP4 7 3121 JT000	Pretty 47k ohm 1/8W ±5%	1
R202	RP1 0 3121 JT000	Pretty 10k ohm 1/8W ±5%	1
R203	RP1 0 1121 JT000	Pretty 100 ohm 1/8W ±5%	1
R204	RP3 6 2121 JT000	Pretty 3.6k ohm 1/8W ±5%	1
R205	RP1 0 4121 JT000	Pretty 100k ohm 1/8W ±5%	1
R206	RP1 2 3121 JT000	Pretty 12k ohm 1/8W ±5%	1
R207	RP1 2 2121 JT000	Pretty 1.2k ohm 1/8W ±5%	1

PARTS LIST (Continued)

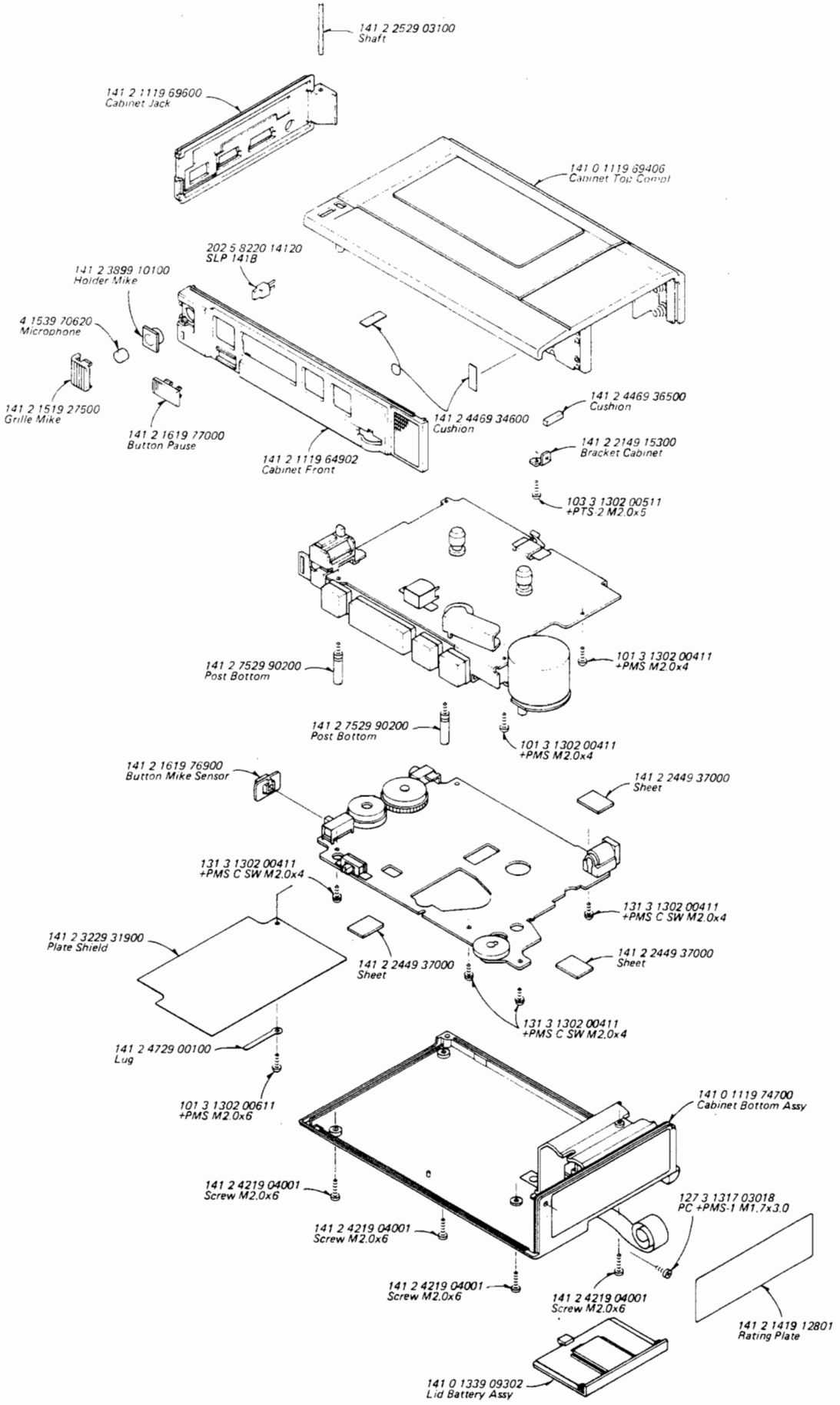
Ref. No.	Part No.	Description	Q'ty
	AMPLIFIER P.C.B. ASSY		
R208	RP2 2 1121 JT000	Pretty 220 ohm 1/8W ±5%	1
R209	RP1 0 0121 JT000	Pretty 10 ohm 1/8W ±5%	1
R210	RP1 0 2121 JT000	Pretty 1k ohm 1/8W ±5%	1
R211	RP1 0 3121 JT000	Pretty 10k ohm 1/8W ±5%	1
R212	RP1 2 0121 JT000	Pretty 12 ohm 1/8W ±5%	1
R301	RP1 2 2121 JT000	Pretty 1.2k ohm 1/8W ±5%	1
R302	RP6 8 1121 JT000	Pretty 680 ohm 1/8W ±5%	1
R303	RP8 2 2121 JT000	Pretty 8.2k ohm 1/8W ±5%	1
R304	RP8 2 2121 JT000	Pretty 8.2k ohm 1/8W ±5%	1
R305	RP3 3 4121 JT000	Pretty 330k ohm 1/8W ±5%	1
R306	RP1 0 3121 JT000	Pretty 10k ohm 1/8W ±5%	1
R307	RD3 0 A251 JS000	Carbon 3 ohm 1/4W ±5%	1
R308	RD3 3 0251 JS000	Carbon 33 ohm 1/4W ±5%	1
R309	RP1 0 3121 JT000	Pretty 10k ohm 1/8W ±5%	1
R310	RP2 2 2121 JT000	Pretty 2.2k ohm 1/8W ±5%	1
R311	RP4 3 1121 JT000	Pretty 430 ohm 1/8W ±5%	1
R312	RP3 0 1121 JT000	Pretty 300 ohm 1/8W ±5%	1
R313	RP2 2 3121 JT000	Pretty 22k ohm 1/8W ±5%	1
R314	RP3 3 2121 JT000	Pretty 3.3k ohm 1/8W ±5%	1
R315	RP1 5 1121 JT000	Pretty 150 ohm 1/8W ±5%	1
R316	RP1 0 4121 JT000	Pretty 100k ohm 1/8W ±5%	1
R317	RP1 2 3121 JT000	Pretty 12k ohm 1/8W ±5%	1
R318	RP3 3 2121 JT000	Pretty 3.3k ohm 1/8W ±5%	1
R319	RP4 7 2121 JT000	Pretty 4.7k ohm 1/8W ±5%	1
R320	RP3 3 2121 JT000	Pretty 3.3k ohm 1/8W ±5%	1
R321	RP3 9 1121 JT000	Pretty 390 ohm 1/8W ±5%	1
R322	RP8 2 0121 JT000	Pretty 82 ohm 1/8W ±5%	1
R323	RP1 2 1121 JT000	Pretty 120 ohm 1/8W ±5%	1
TH301	204 5 9000 01000	Thermister, SDT100	1
VR1	4 2229 73400	Volume Control (Volume, A-20k)	1
VR2	4 2229 71912	Volume Control (Balance, B-20k)	1
VR3	4 2229 73223	Volume Control (Pitch, B-8k)	1
	MECHANISM		
S1	4 2319 71860	Leaf Switch (Power)	1
S2	4 2319 74750	Leaf Switch (Muting)	1
HD1	4 2429 71310	Play Head	1
M1	4 5279 70904	Motor	1
	141 0 3119 16103	Chassis Assy	1
	141 0 3789 01300	Motor Bracket Assy	1
	141 0 5219 08100	Flywheel Assy	1
	141 0 5369 00701	Reel Plate Assy	1
	141 0 5369 01100	Completed Reel Plate	1
	141 0 5419 01000	Pinch Roller Assy	1
	141 0 5519 06200	Take-up Idler Assy	1
	141 0 7319 17301	Slide Base Assy	1
	141 0 7419 19706	F.F. Lever Assy	1
	141 0 7419 19806	Rewind Lever Assy	1
	141 0 7419 19906	Play Lever Assy	1
	141 0 7419 20106	Stop Lever Assy	1
	141 0 7419 20200	Lock Plate Assy	1
	141 0 7419 20300	Select Crank Assy	1
	141 0 7439 05600	Eject Lever Assy	1
	141 0 7439 05701	Record Lock Lever Assy	1
	141 0 7439 05800	Take-up Pulley Arm Assy	1
	141 0 7439 06000	Sensor Lever Assy	1
	141 2 2449 37100	Sheet	1
	141 2 2449 37600	Sheet	1
	141 2 3159 02400	Handle Bracket	1
	141 2 3529 18101	Spacer, Head	1
	141 2 4179 01800	Nut	1
	141 2 4219 03000	Screw M2.0x3	7
	141 2 4219 04000	Screw M2.0x6	2
	141 2 4219 09000	Screw M2.0x2	1
	141 2 4219 11400	Screw M2.0x5.5	2
	141 2 4459 15900	Motor Cushion	2
	141 2 4469 00500	Flywheel Thrust	1
	141 2 4469 17200	Cushion	1
	141 2 4539 06900	Washer	1
	141 2 4539 08000	Washer	1

Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
	141 2 4539 09300	Washer	1
	141 2 4539 24600	Washer	1
	141 2 4619 00901	Brake Tube	1
	141 2 4729 04000	Lug	1
	141 2 4729 07000	Lug	1
	141 2 5519 23300	F.F. Gear	1
	141 2 5519 31500	Drive Idler	1
	141 2 5649 10800	Take-up Belt	1
	141 2 5649 10900	Drive Belt	1
	141 2 5649 12800	Counter Belt	1
	141 2 5719 07700	Spacer	1
	141 2 5719 07800	Spacer	2
	141 2 5719 09000	Spacer	1
	141 2 5729 14100	Capstan Metal	1
	141 2 7149 02700	Brake Plate	1
	141 2 7419 52300	Shut-off Lever	1
	141 2 7419 52600	Select Lever	1
	141 2 7439 13300	Review Lever	1
	141 2 7539 01700	Post	1
	141 2 8119 06000	Counter	1
	141 2 8139 04100	Counter Bracket	1
	141 2 8219 17800	Spacer, Pinch Roller	1
	141 2 8219 24800	Tape Guide	1
	141 2 8459 02601	Flywheel Plate	1
	141 2 8519 12200	Spring, Motor Lock	1
	141 2 8519 33000	Spring, Index Lock Lever	1
	141 2 8519 43000	Spring, Locker	1
	141 2 8519 47400	Spring, Head	1
	141 2 8519 50701	Spring, Play Lever	2
	141 2 8519 57300	Spring, Stop Lever	1
	141 2 8519 63600	Spring, Brake	2
	141 2 8519 74700	Spring, Brake	1
	141 2 8519 75100	Spring, Record Lock	1
	141 2 8519 75700	Spring, Pinch Roller	1
	141 2 8519 77000	Spring, Lock Plate	1
	141 2 8539 31500	Spring, Cassette	1
	141 2 8549 06000	Spring, Slide Base	1
	101 3 1302 00411	Screw, Pan Hd. +M2.0x4	2
	101 3 2502 00811	Screw, Cylinder Hd. -M2.0x8	1
	110 3 1102 00023	Small Round Washer M2.0	1
	110 3 3202 00082	Tooth Outer Washer-B M2.0	1
	112 3 1301 50082	E Ring M1.5	12
	112 3 1302 00082	E Ring M2.0	3
	131 3 1302 00411	Screw, Pan Hd. C SW +M2.0x4	2
	141 2 4469 17200	Cushion	1

NOTES: 1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

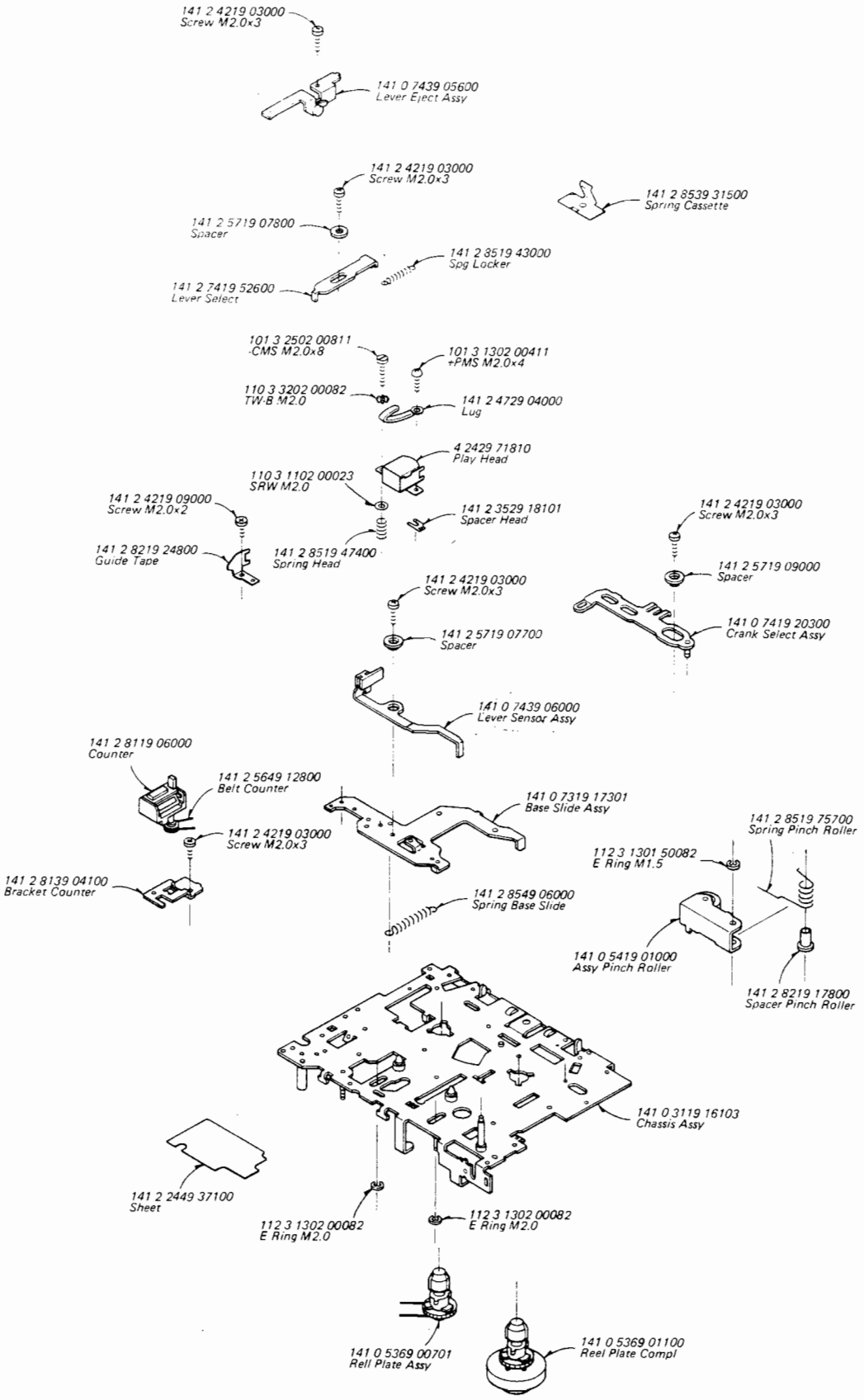
EXPLODED VIEW

(Cabinet)



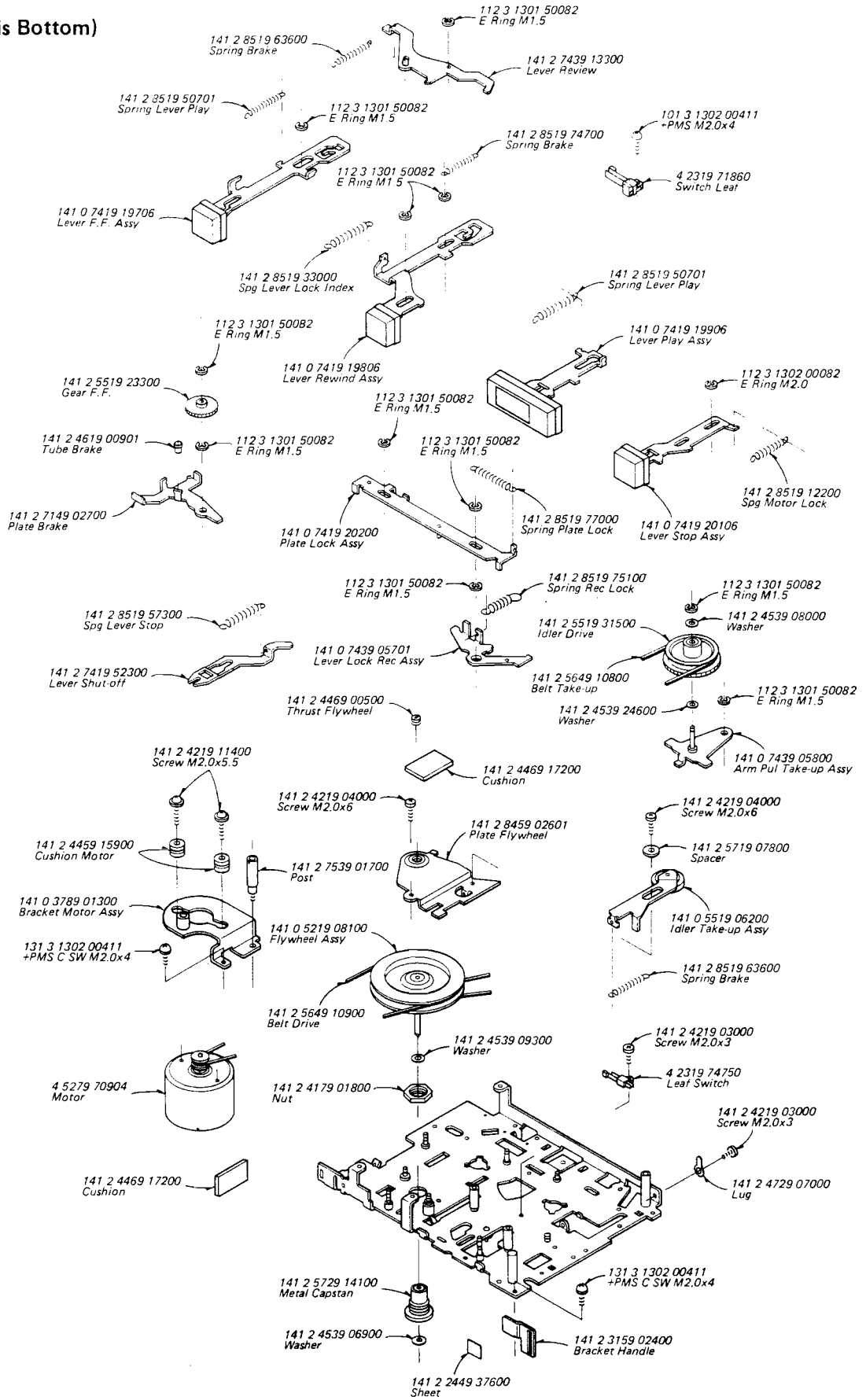
EXPLODED VIEW (Continued)

(Chassis Top)

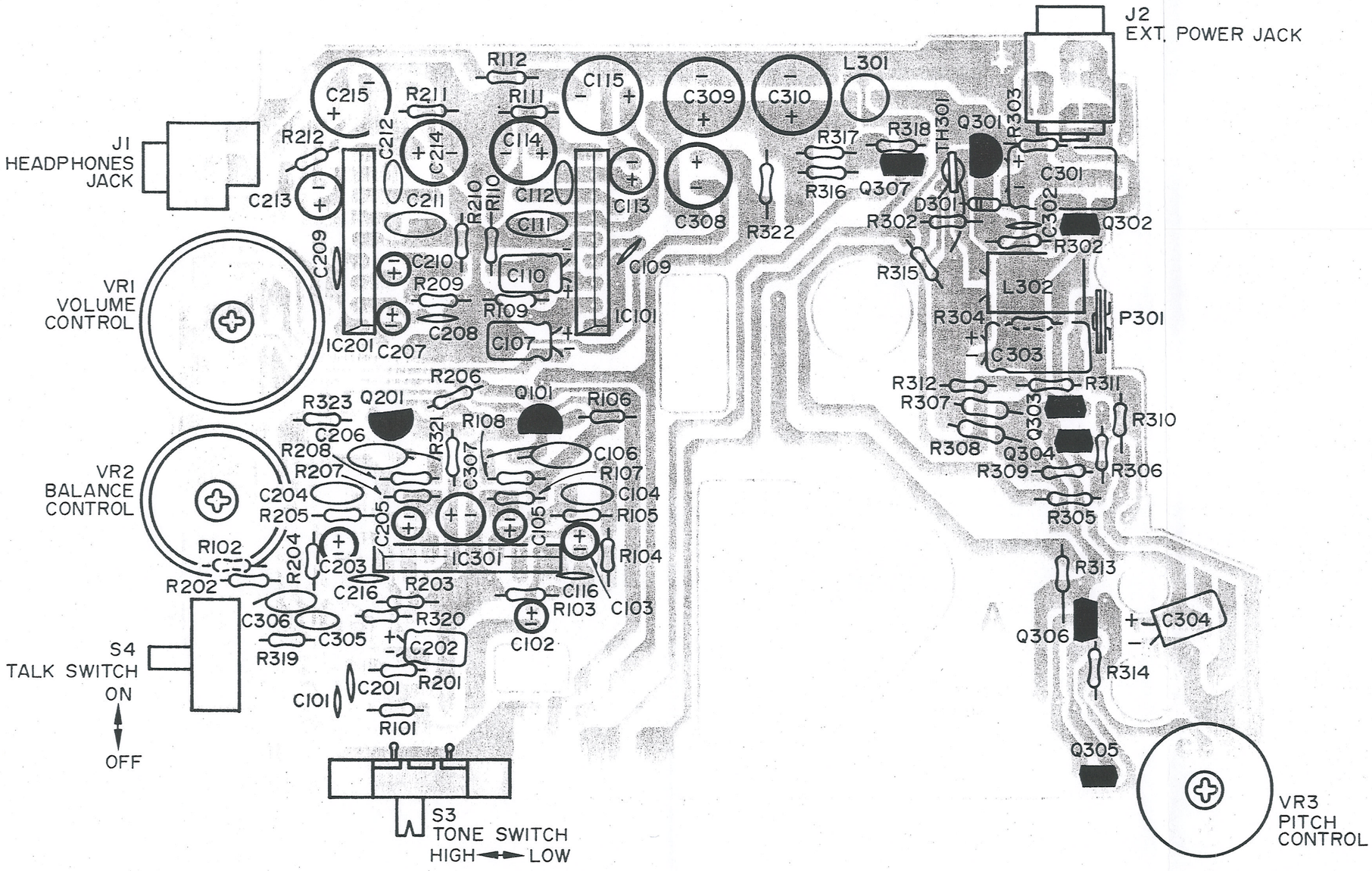


EXPLODED VIEW (Continued)

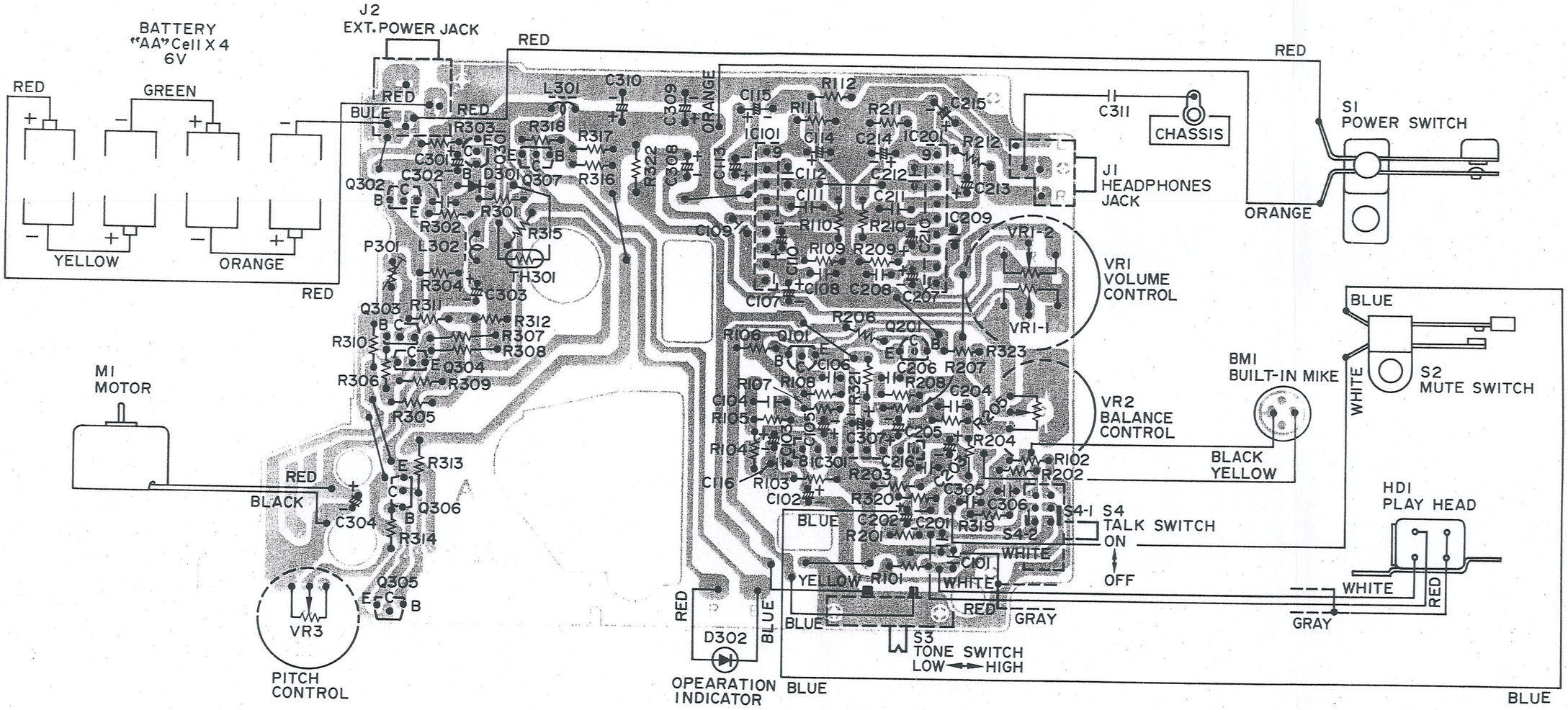
(Chassis Bottom)



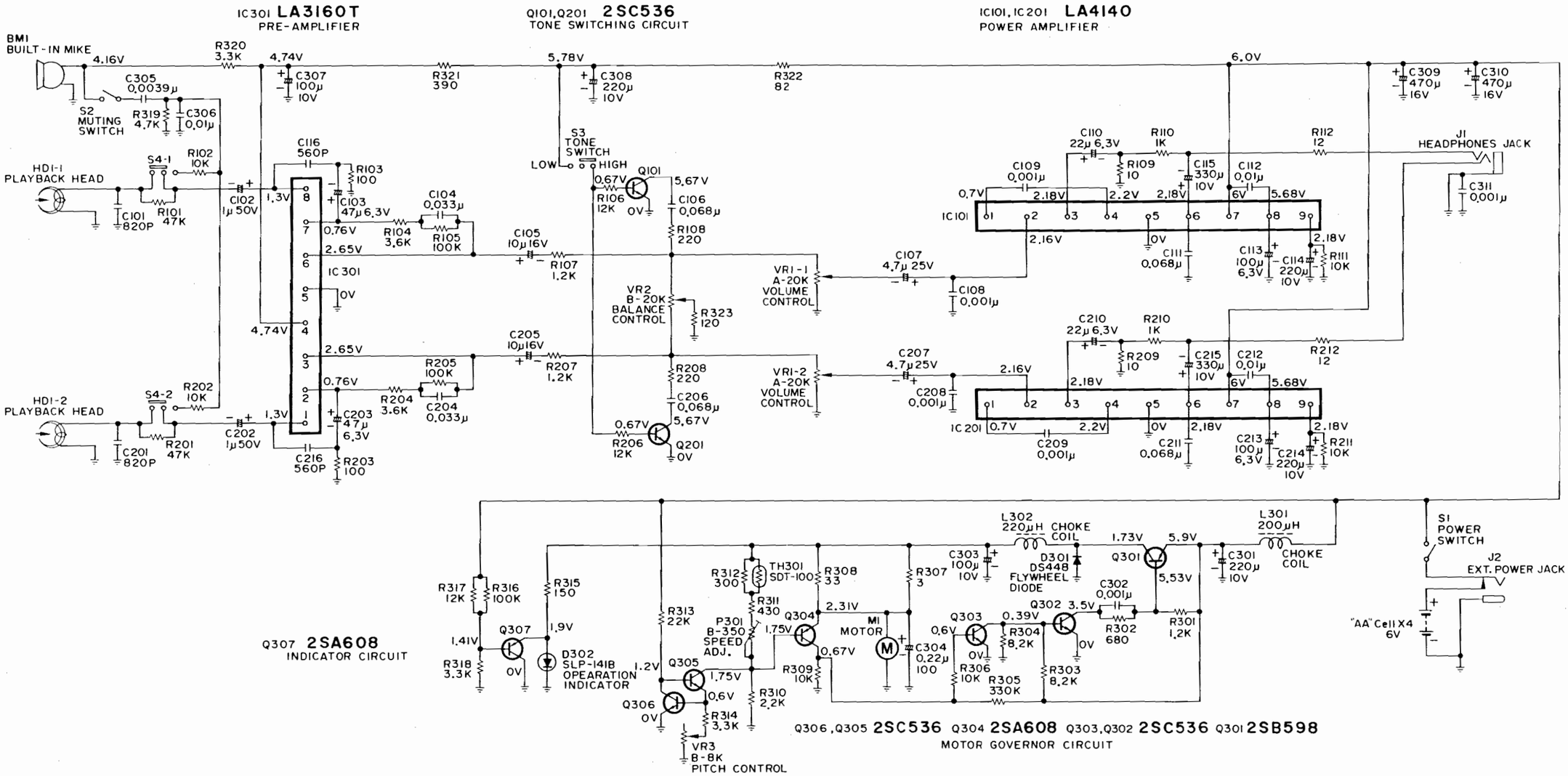
PARTS LOCATION



WIRING DIAGRAM

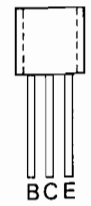
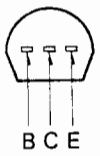
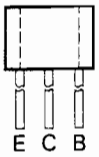
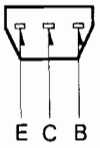


SCHEMATIC DIAGRAM



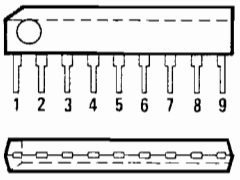
No.	Name	Position
S1	Power Switch	OFF
S2	Muting Switch	OFF
S3	Tone Switch	HIGH
S4	Talk Switch	OFF

IC & TRANSISTOR LEAD IDENTIFICATION

FRONT VIEW	BOTTOM VIEW	TRANSISTOR
		2SC536
		2SC536 2SA608 2SB598
TERMINAL NAMES		
B⇒ BASE C⇒ COLLECTOR E⇒ EMITTER		

LA4140

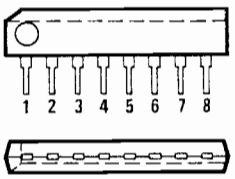
FRONT VIEW



BOTTOM VIEW

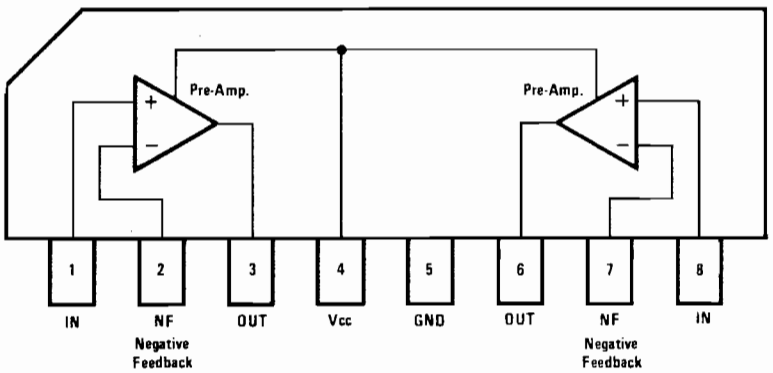
LA3160T

FRONT VIEW



BOTTOM VIEW

LA3160T BLOCK DIAGRAM



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